ABSTRACT

A CO_2 removal and sequestration system uses a limestone bed of coarse crushed limestone covering pipes which carry a flue gas. The pipes have spaced openings which permit flue gas to pass into the limestone bed. Water fills the bed to about 2/3 of the height of the limestone, which is higher than the depth of the pipes. The water flows through the bed at a predetermined rate. The bed is arranged as a series of parallel rows of beds with open channels between each pair of adjacent rows. The open channels are alternating water inlet and outlet channels. A flue gas delivery system includes headers and manifolds for distributing the flue gas at sufficient pressure to overcome existing water pressure at the pipe openings. The process includes the steps of removing CO_2 from the flue gas in the bed, dissolving CO_2 in the water in the bed, and then returning the water/CO_2 to the ocean, river, lake or other area which may be used to store CO_2.